AF
$
IFW

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Fumihiro SONODA

Appln. No.: 09/774,013

Confirmation No.: 2278

Filed: January 31, 2001

For: IMAGE PROCESSING METHOD

Docket No: Q62082

Group Art Unit: 2621

Examiner: Patrick L. EDWARDS

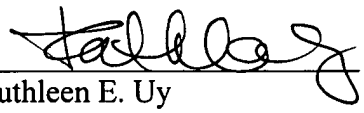
SUBMISSION OF APPEAL BRIEF

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an Appeal Brief. The USPTO is directed and authorized to charge the statutory fee of $500.00 and/or all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,



Ruthleen E. Uy
Registration No. 51,361

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: March 16, 2006

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Fumihiro SONODA

Appln. No.: 09/774,013

Confirmation No.: 2278

Filed: January 31, 2001

For: IMAGE PROCESSING METHOD

Docket No: Q62082

Group Art Unit: 2621

Examiner: Patrick L. EDWARDS

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

Table of Contents

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Fuji Photo Film, Co., Ltd. of Japan, the assignee. The assignment was previously submitted and was recorded on June 26, 2001 at Reel 011939, Frame 0699.

II. RELATED APPEALS AND INTERFERENCES

To the knowledge and belief of Appellant, the Assignee, and the Appellant's legal representative, there are no other appeals or interferences before the Board of Appeals and Interferences that will directly affect or be affected by the Board's decision in the instant Appeal.

III. STATUS OF CLAIMS

Claims 1-22 are pending in the present application and stand finally rejected.

Claims 1-22 have been rejected under 35 U.S.C. § 103(a) as being anticipated by Stavely et al. (U.S. Patent No. 5,969,372; hereinafter "Stavely") in view of Yajima et al. (U.S. Patent No. 4,074,231; hereinafter "Yajima").

No other ground of rejection or objection is currently pending.

A copy of the pending claims on appeal is set forth in an attached Appendix.

IV. STATUS OF AMENDMENTS

Amendments to the claims were submitted in an Amendment Under 37 C.F.R. § 1.111 filed May 24, 2004 in response to the Non-final Office Action dated December 22, 2003. Amendments to the claims were submitted in an Amendment Under 37 C.F.R. § 1.116 filed December 13, 2004 in response to the Final Office Action dated August 11, 2004. An RCE was filed January 10, 2005 in response to the Advisory Action dated January 10, 2005. Amendments to the claims were submitted in an Amendment Under 37 C.F.R. § 1.111 filed June 17, 2005 in response to the Non-final Office Action dated March 23, 2005. A Response Under 37 C.F.R. § 1.116 was filed December 20, 2005 in response to the Final Office Action dated September 20, 2005. The response included no claim modifications. In the Advisory Action dated January 12, 2006, the Examiner states that the reply filed December 20, 2005, has been considered but did not place the application in a condition for allowance.

All arguments and amendments are believed to have been previously entered and made of record.

A copy of the claims on appeal is set forth in an attached Appendix.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Appellant's invention as recited in independent claims 1 and 7 is directed to methods for photoelectrically reading an image on a film.

Blemishes, such as dust and scratches, often occur as defects on film. However, blemish elimination processing cannot be performed until a defective image and an actual image are obtained. In a defective image, the energy distribution intensity of infrared light is used to judge the degree of a blemish on an actual image so as to determine a correction method. An actual image comprises red, green, and blue images where the energy distribution intensity of visible light on each pixel position is handled as image data. See page 6, lines 5-16. Consequently, processing can take a long period of time in order to complete blemish elimination processing. See page 6, lines 16-19.

Therefore, exemplary embodiments of the present invention address the problems of the prior art, such as those discussed above, thereby increasing the efficiency in processing an image print.

Claim 1

An image processing method for photoelectrically reading an image on a film and then performing a blemish elimination processing, comprising the steps of reading a defective image to provide information regarding a defect on a film (see for example, page 14, lines 11 to page 15, line 20; page 29, line 22 to page 30, line 15); then, reading photoelectrically said image to obtain an actual image (see for example, page 20, lines 8-13; page 25, lines 4-6; page 32, lines 7-22); performing preprocessing for the blemish elimination processing on said defective image

while reading photoelectrically said image (see for example, page 19, line 20 to page 20, line 13; page 33, lines 8-15); and performing the blemish elimination processing on a blemish of said actual image, based on the defective image subjected to said preprocessing (see for example, page 23, line 12 to page 24, line 4), wherein said preprocessing comprises edge enhancement processing (see for example, page 9, lines 15-18; page 21, lines 9-13; page 23, lines 6-11; page 31, lines 9-12). See for example, Fig. 2.

Claim 7

An image processing method for photoelectrically reading an image on a film and then performing a blemish elimination processing, comprising the steps of: reading a defective image to provide information regarding a defect on a film film (see for example, page 14, lines 11 to page 15, line 20; page 29, line 22 to page 30, line 15); performing preprocessing for the blemish elimination processing on said defective image (see for example, page 19, line 20 to page 20, line 13; page 33, lines 8-15); and performing the blemish elimination processing on a blemish of an actual image which is obtained by reading photoelectrically said image, based on the defective image subjected to said preprocessing (see for example, page 23, line 12 to page 24, line 4), wherein said preprocessing comprises edge enhancement processing (see for example, page 9, lines 15-18; page 21, lines 9-13; page 23, lines 6-11; page 31, lines 9-12). See for example, Fig. 2.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-22 have been rejected under 35 U.S.C. § 103(a) as being anticipated by Stavely in view of Yajima.

VII. ARGUMENT

I. Claims 1-22 are patentable over Stavely in view of Yajima

As indicated above, claims 1-22 have been rejected under 35 U.S.C. § 103(a) as being anticipated by Stavely in view of Yajima et al.

As an initial matter, Appellant notes that for the single ground of rejection, the claims fall into separate groups, wherein the second group includes claim 2 and the third group includes claims 4, 5, 8 and 10. The second and third groups are separately patentable for the reasons set forth below.

Stavely is directed to a film scanner for correcting dust and scratches by using dark-field illumination. See Title. Stavely discloses scanning an entire image using white light followed by scanning an image using infrared light or vice versa. See col. 5, lines 5-10. A preferred embodiment of Stavely discloses switching between white light and infrared light on a scan-line by scan-line basis to avoid mechanical position inconsistency, sophisticated algorithms and additional memory associated with performing two separate full-image scans. See col. 5, lines 13-16. For each scan line, image processing is used on a pixel by pixel basis to remove image areas from the white light scan corresponding to low intensity areas in the infrared scan. Image processing software is then used to fill in the resulting blank areas in the white scan with colors corresponding to surrounding areas. See col. 5, lines 45-50.

Image processing techniques including area size thresholding, feature clustering, edge detection and boundary following, and region extraction methods may be used to limit image correction to larger features and to ignore small scattered points of low intensity and noise in the

infrared scan. See col. 5, lines 60-65. In detecting a surface artifact, a point on a film is illuminated along a first optical path and the intensity is measured. Then the intensity of the light passing through the point along a second optical path is measured. If the intensity of the light along the second optical path is greater than a threshold value, the point is identified as an artifact. See col. 10, lines 22-40; Fig. 9.

Claim 1

Claim 1 recites "performing *preprocessing* for the *blemish elimination processing* on said defective image *while reading photoelectrically said image*." The Examiner asserts that this aspect of the claim is disclosed by Stavely col. 5, lines 60-65 (see Office Action of March 23, 2005 at page 3).

The respective column and lines cited by the Examiner disclose performing image processing for each scan line to remove image areas from a white light scan *corresponding to* low intensity areas in an infrared scan. Image processing software is used to fill the resulting blank areas *in the white scan* with colors corresponding to the surrounding areas. However, the image processing is not preprocessing as claimed. In particular, it appears that the image processing performed in Stavely, is performed to obtain an actual image free of low intensity areas as opposed to *preprocessing.*

In addition, the respective column and lines cited by the Examiner disclose that known *image processing* techniques such as area size thresholding, feature clustering, edge detection and boundary following, and region extraction methods may be used to limit image correction to

larger features. However, such processes are directed to *image processing* and are not directed to *blemish elimination processing* for eliminating a blemish on an image.

Assuming *arguendo,* the image processing of Stavely discloses the claimed blemish elimination processing, the image processing of Stavely is not performed on the defective image. In Stavely, the image processing is performed on the actual image where blank areas are filled with colors corresponding to surrounding areas and not a defective image (infrared image). See col. 4, lines 20-28. As discussed in col. 2, lines 26-35, an image processing software is used to alter areas in the first scan, and the first scan corresponds to an actual image to be corrected and not the defective image.

The Examiner's emphasis on the infrared scan image does not correct any deficiency in the rejection. The mere fact that an infrared or defective image is created does not require preprocess blemish correction on that defective image. Rather, Stavely uses the infrared image as a template or guide to correct the normal image but the defective image (e.g. the template or guide) is not itself corrected.

Claim 1 further recites "performing the blemish elimination processing on *a blemish of said actual image, based on* the defective image subjected to said preprocessing." The Examiner cites Stavely col. 4, lines 19-24 for teaching this aspect of the claim (see Office Action of March 23, 2005 at page 3). The respective column and lines cited by the Examiner disclose "scan A is the normal image scan performed using direct (bright-field) white light, producing the image to be corrected. Scan B provides a defect signature (an image of the surface defects), which is then used by *image processing* software to suitably alter corresponding areas in the first scan."

Therefore, Stavely discloses scanning a normal image (Scan A) using direct white light, producing an image to be corrected. Scan B is then performed to provide a defect signature (an image of the surface defects) which is then used by image processing software to suitably alter corresponding areas in the first scan (Scan A).

However, there is no teaching or suggestion that blemish elimination processing is performed on an actual image (Scan A), based on the defective image (Scan B) subjected to said preprocessing (image processing as cited by the Examiner). In particular, it is unclear what is being cited by the Examiner for teaching the claimed blemish elimination processing since Stavely appears to at most disclose image processing (preprocessing as cited by the Examiner). Further, the Examiner's reasoning is circular since the Examiner appears to be asserting that image processing is performed on areas in a first scan (Scan A) based on the image processing that was performed in the first scan.

As indicated above, the Examiner cites the image processing of Stavely for disclosing the claimed "performing *preprocessing* for the blemish elimination processing on said defective image *while reading photoelectrically said image*." Therefore, the Examiner cannot cite the image processing of Stavely for also disclosing "performing the blemish elimination processing on a blemish of said actual image, based on the defective image subjected to said preprocessing," which is a separate and distinct limitation.

Although Stavely states that the order of Scan A and Scan B is not important (col. 4 lines 24-25), this merely suggests that the order of Scan A and B is not important, and does not define the order or chronological relationship between preprocessing of the defective image by Scan B

and the reading by Scan A. There is no description of performing preprocessing in the reading of Scan A to the image of Scan B read prior to Scan A.

Claim 1 further recites "wherein said preprocessing comprises edge enhancement processing." The Examiner concedes that this aspect of the claim is not disclosed in Stavely and cites Yajima, col. 2, lines 41-48, to cure the deficiency (see Office Action of March 23, 2006 at page 3).

Yajima is directed to a system which recognizes patterns such as printed characters and hand-written characters. See col. 1, lines 5-10. The respective column and lines cited by the Examiner disclose enhancing an edge of a line without being influenced by noises, such as smear and strain, on ground paper with characters depicted thereon and which produces a pattern of good quality from a blurred pattern ascribable to the shades of the characters and the contrast thereof to the background. However, Appellant submits that it would not be obvious to one of ordinary skill in the art to combine the edge enhancement in a system for recognizing printed characters and hand-written characters of Yajima with the film scanner of Stavely.

Assuming the combination of Yajima with Stavely is obvious, the line edge enhancement performed is Yajima is performed on an input signal S and not on a defective image for blemish elimination processing. In establishing obviousness, the Examiner must look at the references as a whole as to what they would convey to one of skill in the art and the Examiner cannot merely pick and choose elements of the prior art to teach the claimed elements.

Further, the examiner asserts that edge enhancement pre-processing is disclosed in col. 5, lines 60-65 of Stavely (see Office Action of September 20, 2005 at page 2). However, the

respective column and lines cited by the Examiner do not teach this aspect of the claim. In particular, the respective column and lines of Stavely disclose image processing techniques used to limit image correction to larger features of the image ignoring small scattered points of low intensity and noise in the infrared scan. On the other hand, edge enhancement processing is a process to emphasize a sudden change in image signals (noise and regionally varying scattered points). If edge enhancement processing is performed on the defective image as an image processing in Stavely, the small scattered points of low intensity and noise in the infrared scan, which should be ignored according to the description of Stavely, will be emphasized to an unignorable level. This would consequently lead to a failure in limiting image correction to larger features of the image, as described in Stavely, because of enhanced small scattered points of low intensity and noise in the infrared scan image. Thus, it is clear that the edge enhancement processing cannot be included in the image processing described in col. 5, lines 60-65 of Stavely.

Further, in claim 1, the defective image is subjected to edge enhancement processing so as to emphasize a boundary of an edge of a defective portion and define the position of the defect, and not to limit image correction to larger features. Accordingly, performing preprocessing including edge enhancement processing which emphasizes small scattered points of low intensity is pointless in Stavely, which limits image correction to larger features of the image. Therefore, assuming Yajima discloses the claimed edge enhancement processing, based on the foregoing, one of ordinary skill in the art would not be motivated to combine Yajima with Stavely.

For at least the above reasons, claim 1 and its dependent claims should be deemed allowable. To the extent claim 7 recites similar elements, claim 7 and its dependent claims should be deemed allowable for at least the same reasons.

Claim 2

Claim 2 recites "said preprocessing is finished by the time the actual image is obtained." As discussed above, although Stavely states that the order of Scan A and Scan B is not important (col. 4 lines 24-25), this merely suggests that the order of Scan A and B is not important, and does not define the order or chronological relationship between preprocessing of the defective image by Scan B and the reading by Scan A. In particular, there is no disclosure of preprocessing being finished by the time the actual image is obtained as defined in claim 2. Consequently, claim 2 should be deemed allowable.

Claims 4, 5, 8 and 10

The Examiner asserts that the defect signature information (an image of the surface defects) of Stavely is analogous to the flag information as recited in claims 5 and 8. The Examiner then asserts that the image of surface defects from the infrared image is analogous to the evaluated result as recited in claims 4 and 10 (see Office Action of March 23, 2005 at page 3). However, the defect signature information and an image of the surface defects refer to the same aspect of Stavely (Stavely, column 4, lines 21-24). Since the Examiner is citing the same aspect of the reference for teaching different aspects of the claims, Appellant respectfully requests that the Examiner cite other aspects of the prior art, or cite new prior art for teaching the separate and distinct claim elements. For at least the above reasons, claims 4, 5, 8 and 10 should

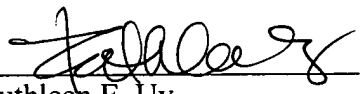
be deemed allowable.

VIII. CONCLUSION

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Ruthleen E. Uy
Registration No. 51,361

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: March 16, 2006

CLAIMS APPENDIX

CLAIMS 1-22 ON APPEAL:

1. An image processing method for photoelectrically reading an image on a film and then performing a blemish elimination processing, comprising the steps of:

reading a defective image to provide information regarding a defect on a film;

then, reading photoelectrically said image to obtain an actual image;

performing preprocessing for the blemish elimination processing on said defective image while reading photoelectrically said image; and

performing the blemish elimination processing on a blemish of said actual image, based on the defective image subjected to said preprocessing,

wherein said preprocessing comprises edge enhancement processing.

2. The image processing method according to claim 1, wherein said preprocessing is finished by the time the actual image is obtained.

3. The image processing method according to claim 1,

wherein the image on the film is sequentially read on a plane basis, and

wherein said actual image is obtained and the blemish elimination processing is performed on the actual image by using said defective image subjected to said preprocessing.

4. The image processing method according to claim 1,

wherein said defective image is evaluated to obtain a evaluated result, and

wherein said preprocessing and said blemish elimination processing are stopped in accordance with said evaluated result.

5. The image processing method according to claim 1, wherein said preprocessing comprises production of flag information which indicates the presence or absence of the defect on a pixel unit basis from the defective image.

6. The image processing method according to claim 1, wherein said defective image is photoelectrically read by using infrared light.

7. An image processing method for photoelectrically reading an image on a film and then performing a blemish elimination processing, comprising the steps of:

reading a defective image to provide information regarding a defect on a film;

performing preprocessing for the blemish elimination processing on said defective image; and

performing the blemish elimination processing on a blemish of an actual image which is obtained by reading photoelectrically said image, based on the defective image subjected to said preprocessing,

wherein said preprocessing comprises edge enhancement processing.

8. The image processing method according to claim 7, wherein said preprocessing comprises production of flag information which indicates the presence or absence of the defect on a pixel unit basis from the defective image.

9. The image processing method according to claim 7, wherein said defective image is photoelectrically read by using infrared light.

10. The image processing method according to claim 7,

wherein said defective image is evaluated to obtain a evaluated result, and

wherein said preprocessing and said blemish elimination processing are stopped in accordance with said evaluated result.

11. The image processing method according to claim 7, wherein said preprocessing is finished by the time the actual image is obtained.

12. An image processing method according to claim 1, wherein said actual image is an image without blemishes after performing the blemish elimination processing.

13. An image processing method according to claim 7, wherein said actual image is an image without blemishes after performing the blemish elimination processing.

14. An image processing method according to claim 1, wherein said edge enhancement comprises enhancing an edge of an image corresponding to a defective portion, emphasizing a boundary of the defective portion, and defining the position of the defect of the defective image.

15. An image processing method according to claim 1, wherein the preprocessing is performed during or before the image on the film is fine scanned by visible light.

16. An image processing method according to claim 7, wherein the preprocessing is performed during or before the image on the film is fine scanned by visible light.

17. An image processing method according to claim 4, wherein said evaluated result is a result on whether image data which is smaller than a given threshold value is present before performing the preprocessing.

18. An image processing method according to claim 17, wherein if a value of a defect in the defective image does not meet the threshold value, a blemish elimination processing is not needed and the defective image is directly sent to an image processing subsection without being subjected to preprocessing.

19. An image processing method according to claim 1, wherein said edge enhanced image data of the defective image is binary coded.

20. An image processing method according to claim 7, wherein preprocessing for the blemish elimination processing on the defective image is performed before reading photoelectrically the image to obtain an actual image.

21. An image processing method according to claim 1, wherein the image is photoelectrically read to obtain a full actual image read on the film.

22. An image processing method according to claim 1, wherein the defective image is read to obtain a full defective image read on the film.

EVIDENCE APPENDIX:

None.

RELATED PROCEEDINGS APPENDIX

None.